CLAIMS

1. A vehicle heat transfer module, comprising:

a conduit for air circulation, said conduit including an input and output for vehicle cabin air and an input and output for fresh air;

an evaporator in said conduit between said cabin air input and cabin air output;

a heater having vehicle engine coolant circulated therethrough, said heater being in a first path between said fresh air input and said fresh air output and in a second path between said cabin air input and said cabin air output;

a first door adapted to selectively open or close said fresh air input and fresh air output;

a second door adapted to block a selected amount of cabin air from said heater; and

a controller adapted to control said first and second doors responsive to heating and cooling requirements.

2. The apparatus of claim 1, wherein said evaporator is disposed over said cabin air input.

3. The apparatus of claim 1, whereby said controller controls said first door to close said fresh air input and fresh air output when controlling said second door to block less than all of said cabin air from said heater.

4. The apparatus of claim 1, whereby said controller controls said first door to open said fresh air input and fresh air output when controlling said second door to block all of said cabin air from said heater.

5. The apparatus of claim 1, further comprising a detector detecting said heating and cooling requirements for the vehicle cabin, said detector being operably connected to said controller.

6. The apparatus of claim 1, further comprising a blower adapted to selectively blow air from said conduit out said cabin air output.

7. The apparatus of claim 1, further comprising a secondary blower adapted to selectively blow air in a path from said fresh air input to said fresh air output.

8. The apparatus of claim 1, wherein

said conduit defines a third path between said cabin air input and said cabin air output, wherein said evaporator is in said third path and said third path does not include said first path, and

said second door is controllably moveable between a first position blocking said first path from said third path and at least one second position in which a selected amount of cabin air in said third path is diverted to said second path.

9. The apparatus of claim 8, wherein there are a plurality of second positions, each diverting a different selected amount of cabin air in the third path to said second path, and said second door is pivotable between said first position and said second positions.

10. A method of controlling cabin and engine temperatures of a vehicle, comprising:

providing a heater and evaporator in a unit, said heater having vehicle engine coolant circulated therethrough and said unit having an input and output for cabin air and an input and output for fresh air;

selectively circulating cabin air and fresh air over said heater and evaporator, including selectively either

circulating cabin air from said cabin air input over said evaporator and out said cabin air output, and circulating fresh air from said fresh air input over said heater and out said fresh air output, or

blocking said fresh air input and fresh air output and passing cabin air from said cabin air input over at least one of said evaporator and said heater and out said cabin air output.

11. The method of claim 10, wherein only a selected portion of said cabin air is passed over said heater when said fresh air input is blocked.

12. The method of claim 11, wherein said selected portion of said cabin air passed over said heater is based on the heating and cooling requirements detected in the vehicle cabin.

13. The method of claim 10, further comprising detecting heating and cooling requirements, wherein said selectively circulating cabin air and fresh air step is responsive to detected heating and cooling requirements in the vehicle cabin.

14. The method of claim 10, wherein fresh air is circulated over said heater and cabin air is circulated over said evaporator when a maximum cooling requirement is detected for at least one of said cabin and engine temperatures.

15. The method of claim 10, wherein said heating and cooling requirements are detected in the vehicle cabin.